

---

EXHIBIT M5

WATER QUALITY MANAGEMENT PERMIT  
PUMP STATION NO. 3

---

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT



**WATER QUALITY MANAGEMENT  
POST CONSTRUCTION CERTIFICATION**

APPLICANT IDENTIFIER	
Permittee	Willistown Township
Address	688 Sugartown Road, Malvern, PA 19355
Municipality	Willistown Township
County	Chester
CERTIFICATION	
<p>The following information must be completed and returned to the Permits Section of the DEP Regional Office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation, along with as-built drawings, photographs (if available), and a discussion of any DEP-approved deviations from the design plans during construction. <i>PER 4/29/13 LETTER - PRE CONSTRUCTION</i></p>	
<p>I, <u>DENNIS G. TRACEY</u>, being a Registered Professional Engineer in accordance with the Pennsylvania Professional Engineer's Registration Law do hereby certify that the sewerage facilities approved under Water Quality Management Permit No. <b>1512405 (Pump Station No. 3 Upgrades)</b> have been inspected and constructed in accordance with the plans and specifications approved by DEP.</p>	
Construction Completion Date (MM/DD/YYYY): <u>10/22/2014</u>	
	<b>Supervising Professional Engineer</b>
	Name <u>Dennis G. Tracey</u> (Please Print or Type)
	Signature <u>Dennis G. Tracey</u>
	Date <u>1/23/15</u>
	Title <u>PROJ. MANAGER</u>
	Firm or Agency <u>Buchart Flora, Inc</u>
Telephone <u>856-797-4339</u>	
<b>Permittee's Authorized Representative:</b>	<b>Principal Operator Information (For Sewage Facilities):</b>
Name <u>DAVID R. BURMAN</u> (Please Print or Type)	Name <u>KENNETH E. HEYDT</u> (Please Print or Type)
Signature <u>David R. Burman</u>	Certification Number (if applicable) <u>59126</u>
Title <u>TOWNSHIP MANAGER</u>	Class <u>A, E SUBCLASS 1, 2, 3, 4</u>
Telephone <u>610-647-5300</u>	Type

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT



**WATER QUALITY MANAGEMENT  
POST CONSTRUCTION CERTIFICATION**

APPLICANT IDENTIFIER	
Permittee	Willistown Township
Address	688 Sugartown Road, Malvern, PA 19355
Municipality	Willistown Township
County	Chester
CERTIFICATION	
<p>The following information must be completed and returned to the Permits Section of the DEP Regional Office issuing the WQM permit within 30 days of completion of the project and received by DEP prior to operation; along with as-built drawings, photographs (if available), and a discussion of any DEP-approved deviations from the design plans during construction. <i>PER 4/29/13 LETTER - PRE CONSTRUCTION</i></p>	
<p>I, <u>DENNIS G. TRACEY</u>, being a Registered Professional Engineer in accordance with the Pennsylvania Professional Engineer's Registration Law do hereby certify that the sewerage facilities approved under Water Quality Management Permit No. <b>1512405 (Pump Station No. 3 Upgrades)</b> have been inspected and constructed in accordance with the plans and specifications approved by DEP.</p>	
Construction Completion Date (MM/DD/YYYY): <u>10/22/2014</u>	
	<b>Supervising Professional Engineer</b>
	Name <u>Dennis G. Tracey</u> (Please Print or Type)
	Signature <u>Dennis G. Tracey</u>
	Date <u>1/23/15</u>
	Title <u>PROJ. MANAGER</u>
	Firm or Agency <u>BUCHART FLOREN, INC</u>
Telephone <u>856-797-4339</u>	
<b>Permittee's Authorized Representative:</b>	<b>Principal Operator Information (For Sewage Facilities):</b>
Name <u>DAVID R. BURMAN</u> (Please Print or Type)	Name <u>KENNETH E. HEYDT</u> (Please Print or Type)
Signature <u>David R. Burman</u>	Certification Number (if applicable) <u>59126</u>
Title <u>TOWNSHIP MANAGER</u>	Class <u>A, E SUBCLASS 1, 2, 3, 4</u>
Telephone <u>610-647-5300</u>	Type



# pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHEAST REGIONAL OFFICE

RECEIVED

JUN 07 2012

WILLISTOWN TOWNSHIP

June 4, 2012

Mr. David R. Burman, Manager  
Willistown Township  
688 Sugartown Road  
Malvern, PA 19355

Re: Pump Station No. 3 Upgrades  
Permit No. 1512405  
File Type: Permit  
Willistown Township  
Chester County

Dear Mr. Burman:

Your permit is enclosed.

You must comply with all permit conditions attached to this permit. Construction must be done in accordance with the permit application and all supporting documentation. Please review the permit conditions and the supporting documentation submitted with your application before starting construction.

Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa.C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, P.O. Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.


RECEIVED

JAN 28 2015

WILLISTOWN TOWNSHIP

Southeast Regional Office | 2 East Main Street | Norristown, PA 19401-4915

484.250.5970 | Fax 484.250.5971

Printed on Recycled Paper 

[www.depweb.state.pa.us](http://www.depweb.state.pa.us)

Mr. David R. Burman

- 2 -

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions, please call Mr. James Roth at 484.250.5169.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jenifer Fields', with a stylized flourish at the end.

Jenifer Fields, P.E.  
Regional Manager  
Clean Water

Enclosures

cc: Chester County Health Department  
Mr. Boggs, P.E. – ENTECH Engineering, Inc.  
Operations Section  
Re (joh12clw)144-4



**pennsylvania**  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER SUPPLY AND WASTEWATER MANAGEMENT

## WATER QUALITY MANAGEMENT PERMIT

PERMIT NO. 1512405

AMENDMENT NO. \_\_\_\_\_

APS ID 777690

AUTH ID 922019

A. PERMITTEE (Name and Address): <b>Willistown Township</b> <b>688 Sugartown Road</b> <b>Malvern, PA 19355</b>		CLIENT ID#: <b>86424</b>	B. PRIMARY FACILITY (Name): <b>Willistown Township Sewer System</b>  SUB FACILITY (Name): <b>Pump Station No. 3</b>	
C. LOCATION (Municipality, County): <b>Willistown Township</b> <b>Chester County</b>			SITE ID#: <b>255715</b>	
D. This permit approves sewage pumping station improvements consisting of: installing new pumps and pump controls to increase the pump station's hydraulic capacity from 0.8 mgd to 1.2 mgd.				
Pump Station: <u><b>Pump Station No. 3</b></u> Design Capacity: <u><b>2,000</b></u> GPM Average Annual Flow: <u><b>1.2</b></u> MGD			Pump Station: _____ Design Capacity: _____ GPM Average Annual Flow: _____ MGD	
E. APPROVAL GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING: 1. <b>New Permits:</b> All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit application dated <u><b>03/28/12</b></u> , its supporting documentation, and addendums dated _____, which are hereby made a part of this permit.  <b>Amendments:</b> All construction, operations, and procedures shall be in accordance with the Water Quality Management Permit Amendment application dated _____ and its supporting documentation, and addendums dated _____, which are hereby made a part of this amendment. Except for any herein approved modifications, all terms, conditions, supporting documentation and addendums approved under Water Quality Management Permit No. _____ dated _____ shall remain in effect.  <b>Transfers:</b> Water Quality Management Permit No. _____ dated _____ and conditions, supporting documentation and addendums are also made part of this transfer. 2. <b>Permit Conditions Relating to Sewerage</b> are attached and made part of this permit. 3. Special Conditions numbered _____ are attached and made part of this permit.				
F. THE AUTHORITY GRANTED BY THIS PERMIT IS SUBJECT TO THE FOLLOWING FURTHER QUALIFICATIONS: 1. If there is a conflict between the application or its supporting documents and amendments and the attached conditions, the attached conditions shall apply. 2. Failure to comply with the rules and regulations of DEP or with the terms or conditions of this permit shall void the authority given to the permittee by the issuance of this permit. 3. This permit is issued pursuant to the Clean Streams Law Act of June 22, 1937, P.L. 1987, as amended 35 P.S. §691.1 <i>et seq.</i> Issuance of this permit shall not relieve the permittee of any responsibility under any other law.				
PERMIT ISSUED:  June 4, 2012			BY: TITLE: <u><b>Clean Water Program Manager</b></u>	

Re 30 (joh12clw)144-4a



COMMONWEALTH OF PENNSYLVANIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

**PERMIT CONDITIONS RELATING TO SEWERAGE**

For use in Water Quality Management Permits

(Place a  $\checkmark$  in the box that applies)

**General**

- ☒ 1. The Department of Environmental Protection's (DEP) considers the registered Professional Engineer whose seal is affixed to the design documents to be fully responsible for the adequacy of all aspects of the facility design.
- ☐ 2. The permittee shall adopt and enforce an ordinance requiring the abandonment of privies, cesspools or similar receptacles for human waste and onlot sewage disposal systems on the premises of occupied structures accessible to public sewers. All such structures must be connected to the public sewers.
- ☐ 3. The outfall sewer or drain shall be extended to the low water mark of the receiving body of water. Where necessary to ensure proper mixing and waste assimilation, an outfall sewer or drain may be extended with appurtenances below the low water mark and into the bed of a navigable stream provided that the permittee has secured an easement, right-of-way, license or lease from DEP in accordance with Section 15 of the Dam Safety and Encroachments Act, the Act of November 26, 1978, P.L. 1375, as amended.
- ☒ 4. The approval is specifically made contingent on the permittee acquiring all necessary property rights, by easement or otherwise, providing for the satisfactory construction, operation, maintenance and replacement of all sewers or sewerage structures in, along or across private property with full rights of ingress, egress and regress.
- ☐ 5. When construction of the approved sewerage facilities is completed and before they are placed in operation, the permittee shall notify DEP in writing so that a DEP representative may inspect the facilities.
- ☒ 6. If, at any time, the sewerage facilities covered by this permit create a public nuisance, including but not limited to, causing malodors or causing environmental harm to waters of the Commonwealth, DEP may require the permittee to adopt appropriate remedial measures to abate the nuisance or harm.
- ☐ 7. If, after the issuance of this permit, DEP approves a municipal sewage facilities official plan or an amendment to an official plan under Act 537 (Pennsylvania Sewage Facilities Act, the Act of January 24, 1966, P.L. 1535 as amended) in which sewage from the herein approved facilities will be treated and disposed of at other planned facilities, the permittee shall, upon notification from the municipality or DEP, provide for the conveyance of its sewage to the planned facilities, abandon use and decommission the herein approved facilities including the proper disposal of solids, and notify DEP accordingly. The permittee shall adhere to schedules in the approved official plan, amendments to the plan, or other agreements between the permittee and municipality. This permit shall then, upon notice from DEP, terminate and become null and void and shall be relinquished to DEP.
- ☒ 8. This permit does not relieve the permittee of its obligations to comply with all federal, interstate, state or local laws, ordinances and regulations applicable to the sewerage facilities.
- ☒ 9. This permit does not give any real or personal property rights or grant any exclusive privileges, nor shall it be construed to grant or confirm any right, easement or interest in, on, to or over any lands which belong to the Commonwealth.
- ☐ 10. The authority granted by this permit is subject to all effluent requirements, monitoring requirements and other conditions as set forth in NPDES Permit No. **PA**\_\_\_\_ and all subsequent amendments and renewals. No discharge is authorized from these facilities unless approved by an NPDES Permit.

**Construction**

- ☐ 11. An Erosion and Sedimentation (E&S) Plan must be developed prior to construction of the permitted facility, pursuant to Title 25 Pa. Code Chapter 102, and implemented during and after the earth disturbance activity.

If the activity involves 5 or more acres of earth disturbance, or from 1 to 5 acres of earth disturbance with a point source discharge to surface waters of the Commonwealth, an NPDES permit for the Discharge of Stormwater Associated with Construction Activity is required.

In addition to the state NPDES permitting requirements, some municipalities, through local ordinances, require the E&S Control Plan to be reviewed and approved by the local County Conservation District office prior to construction. For specific information regarding E&S control planning approval and NPDES permitting requirements, please contact your local County Conservation District office.

- ☒ 12. The facilities shall be constructed under the supervision of a Pennsylvania registered Professional Engineer in accordance with the approved reports, plans and specifications.
- ☒ 13. A Pennsylvania registered Professional Engineer shall certify that construction of the permitted facilities was completed in accordance with the application and design plans submitted to DEP, using "Post Construction Certification" (3800-PM-WSFR0179a). It is the permittee's responsibility to ensure that a Professional Engineer is on-site to provide the necessary oversight and/or inspections to certify the facilities. The certification must be submitted to DEP before the facility is placed in operation. If requested, "as-built" drawings, photographs (if available) and a description of any DEP-approved deviations from the application and design plans must be submitted to DEP within 30 days of certification.
- ☐ 14. Manhole inverts shall be formed to facilitate the flow of the sewage and to prevent the stranding of sewage solids. The manhole structure shall be built to prevent undue infiltration, entrance of street wash or grit and provide safe access to facilitate manhole maintenance activities.
- ☐ 15. The local Waterways Conservation Officer of the Pennsylvania Fish and Boat Commission (PFBC) shall be notified when the construction of any stream crossing and/or outfall is started and completed. A written permit must be secured from the PFBC if the use of explosives in any waterways is required and the permittee shall notify the local Waterways Conservation Officer when explosives are to be used.

#### Operation and Maintenance

- ☒ 16. The permittee shall maintain records of "as-built" plans showing all the treatment facilities as actually constructed together with facility operation and maintenance (O&M) manuals and any other relevant information that may be required. Upon request, the "as-built" plans and O&M manuals shall be filed with DEP.
- ☐ 17. The sewers shall have adequate foundation support as soil conditions require. Trenches shall be back-filled to ensure that sewers will have proper structural stability, with minimum settling and adequate protection against breakage. Concrete used in connection with these sewers shall be protected from damage by water, freezing, drying or other harmful conditions until cured.
- ☐ 18. Stormwater from roofs, foundation drains, basement drains or other sources shall not be admitted directly to the sanitary sewers.
- ☐ 19. The approved sewers shall be maintained in good condition, kept free of deposits by flushing or other cleaning methods and repaired when necessary.
- ☒ 20. The sewerage facilities shall be properly operated and maintained to perform as designed.
- ☒ 21. The attention of the permittee is called to the highly explosive nature of certain gases generated by the digestion of sewage solids when these gases are mixed in proper proportions with air and to the highly toxic character of certain gases arising from such digestion or from sewage in poorly ventilated compartments or sewers. Therefore, at all places throughout the sewerage facilities where hazard of fire, explosion or danger from toxic gases may occur, the permittee shall post conspicuous permanent and legible warnings. The permittee shall instruct all employees concerning the aforesaid hazards, first aid and emergency methods of meeting such hazards and shall make all necessary equipment and material accessible.
- ☐ 22. An operator certified in accordance with the Water and Wastewater Systems Operator Certification Act of February 21, 2002, 63 P.S. §§1001, *et seq.* shall operate the sewage treatment plant.
- ☐ 23. The permittee shall properly control any industrial waste discharged into its sewerage system by regulating the rate and quality of such discharge, requiring necessary pretreatment and excluding industrial waste, if necessary, to protect the integrity or operation of the permittee's sewerage system.
- ☒ 24. There shall be no physical connection between a public water supply system and a sewer or appurtenance to it which would permit the passage of any sewage or polluted water into the potable water supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.
- ☐ 25. All connections to the approved sanitary sewers must be in accordance with the corrective action plan as contained in the approved Title 25 Pa. Code Chapter 94 Municipal Wasteload Management Annual Report.
- ☒ 26. Collected screenings, slurries, sludge and other solids shall be handled and disposed of in compliance with Title 25 Pa. Code Chapters 271, 273, 275, 283 and 285 (related to permits and requirements for land filling, land application, incineration and storage of sewage sludge), Federal Regulations 40 CFR 257 and the Federal Clean Water Act and its amendments.





April 29, 2013

Mr. Keith Dudley  
PA DEP  
Southeastern Regional Office  
Water Quality Management  
2 East Main Street  
Norristown, PA 19401-4915

Re: Permit No. 1512405  
Pumping Station #3 Upgrade  
Willistown Township, PA

Dear Keith:

Enclosed is a copy of the updated plans and capacity-related technical specifications for the proposed upgrade for the Willistown Township Pumping Station #3. As previously discussed the proposed capacity of the station remains the same as previously approved at 1.2 mgd (average) and 2.88 mgd (instantaneous peak), but the changes are to better meet the low flow conditions at the station and for constructability reasons. The changes are as follows:

1. There will be three (3) smaller pumps installed instead of the previously approved two (2) pump installation with larger pumps. Under this 3 small pump arrangement, a maximum of two (2) pumps can operate and the third pump will act as a standby or back up pump. With two (2) new pumps operating the station will have a combined capacity of 2,000 gpm, at 263 feet TDH (same capacity as previously approved). However, a single smaller pump can also operate at a lower flow rate to allow more uniform pumping at the low flow conditions (e.g.- single pump at 50% speed can pump as low as 500 gpm) . Also the three (3) pumps are physically smaller than the two (2) large pumps previously proposed and will better fit into the existing station and require fewer structural changes; and will be easier to remove for maintenance. To accommodate the third pump the following are necessary.
  - a. A third VFD will be installed.
  - b. A new triplex pump controller to be operated in Duplex Mode.
  - c. Suction and discharge piping modifications to accommodate the third pump.

2. Other associated changes are being added to accommodate better operation and maintenance of the station. These include the following:
  - a. Modify the floor openings for pump placement and future removal.
  - b. Replacement of existing ventilation blowers.
  - c. Modify/Replace access doors to better accommodate equipment access and removal.

None of these changes affect the previously approved capacity of the station or should materially effect permitted approval. Therefore, as discussed a formal revised permit approval should not be required but we wanted to advise the PADEP of the proposed design changes.

If you have any questions or need any additional information please feel free to contact me or Dennis Tracey of this office.

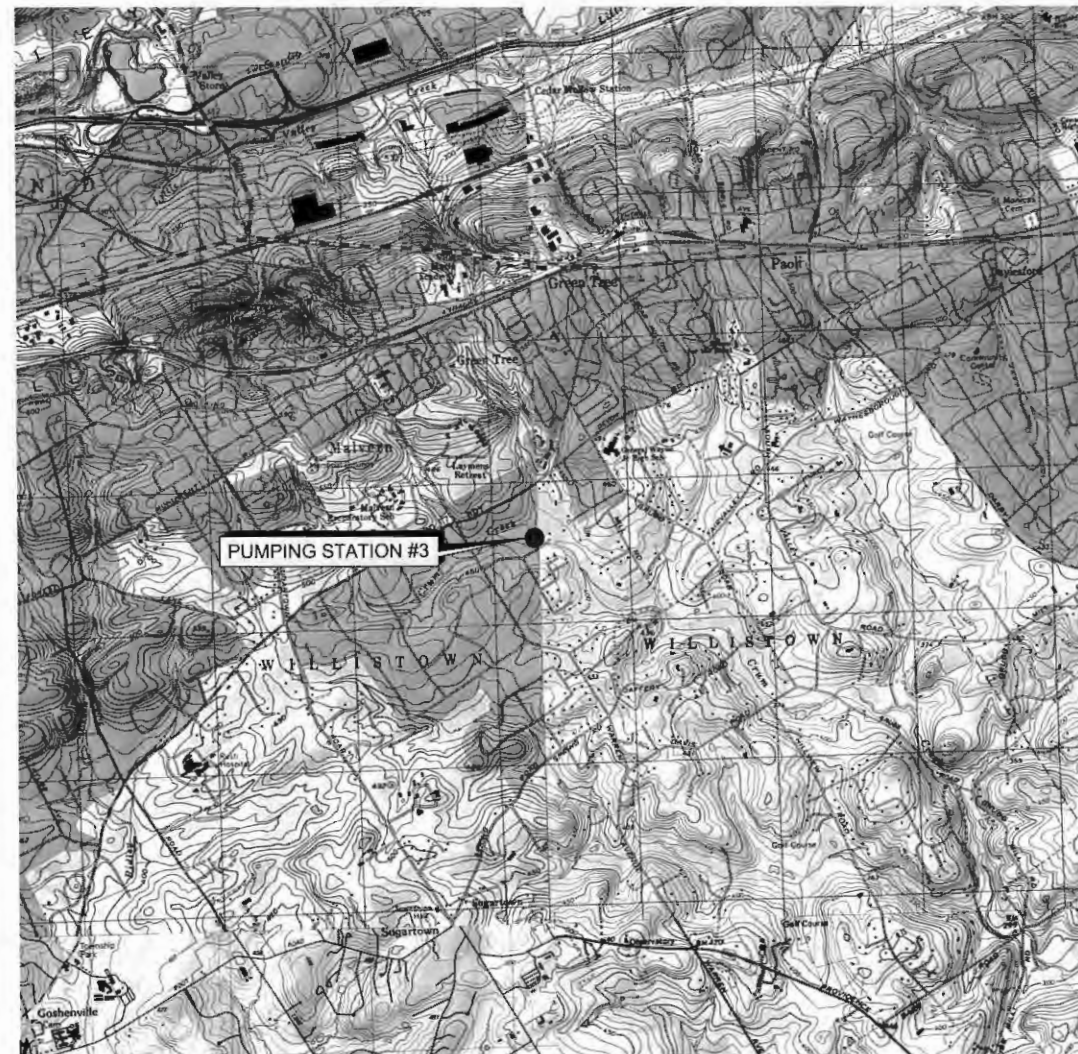
Very truly yours,  
BUCHART- HORN, INC.

Edward J. Di Mond, P.E.  
Director of Environmental

c: file 76925-00

# WILLISTOWN TOWNSHIP SEWAGE PUMPING STATION UPGRADE WILLISTOWN PUMPING STATION #3

WILLISTOWN TOWNSHIP, PENNA.



## INDEX OF DRAWINGS

SHEET G01: GENERAL NOTES, LEGENDS AND SYMBOLS  
SHEET C01: SEWAGE PUMPING STATION LOCATION & SITE PLAN  
SHEET C02: DEMO PLAN  
SHEET C03: PROPOSED PLAN AND SECTION  
SHEET E01-E05: ELECTRICAL SHEETS  
SHEET D01: DETAIL SHEET

AS CONSTRUCTED PLANS BASED ON INFORMATION SUPPLIED BY THE INSTALLING CONTRACTORS (C&T ASSOCIATES - GENERAL, AND PHILIPS BROS. - ELECTRICAL). THERE IS NO WARRANTY OF DIMENSIONAL ACCURACY. THESE DRAWINGS MAY NOT BE UTILIZED FOR NEW CONSTRUCTION OR RECONSTRUCTION WITHOUT PRIOR WRITTEN APPROVAL OF BUCHART HORN, INC. UPON TERMS AND CONDITIONS ACCEPTABLE TO OWNER AND ENGINEER.

SOURCE: USGS QUADS  
(VALLEY FORGE, PA.)

KEY MAP

SCALE: 1"=2000'

MAY 2014  
RECORD DRAWINGS

DENNIS TRACEY  
PROFESSIONAL ENGINEER

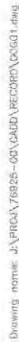
PE0448885E  
P. A. LIC. NO.

DATE



Buchart-Horn, Inc.  
2 Eves Drive, Suite 110  
Marlton, New Jersey 08053

Layout Name: G01  
Date: Oct 02, 2014 - 9:50am



- 1) KEY MAP, USGS VALLEY FORGE, PA AND MALVERN, PA QUADS.
- 2) THE EXISTING INFORMATION SHOWN FOR THIS DRAWING WAS BASED ON RECORD PLANS PREPARED BY GEORGE B. MEBUS, INC. DECEMBER 1971 AND PLANS PREPARED BY YERKES ASSOCIATES, INC., TITLED PUMPING STATION #3 UPGRADES, DATED NOVEMBER 2008.

ELEVATIONS SHOWN ARE BASED ON: VERTICAL, NAV 1929

- 1) AVAILABLE INFORMATION AS TO THE LOCATION OF EXISTING SUBSTRUCTURES AND UTILITIES HAS BEEN COLLECTED FROM VARIOUS SOURCES AND MAY NOT BE ACCURATE. ALL EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY. THE CONTRACTOR SHALL DIG TEST PITS AS REQUIRED TO VERIFY TRUE AND EXACT LOCATIONS OF UNDERGROUND LINES.
- 2) THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, AND SHALL COMPLY WITH ALL CURRENT MARKOUT REQUIREMENTS OF THE PENNSYLVANIA ONE CALL SYSTEM.
- 3) THE CONTRACTOR SHALL ABIDE BY ALL REQUIREMENTS OF THE "HIGH VOLTAGE PROXIMITY ACT".
- 4) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL EXCESS EXCAVATED MATERIAL TO AN APPROVED OFF-SITE LOCATION AT NO ADDITIONAL COST TO THE OWNER.
- 5) ALL CONSTRUCTION ACTIVITIES ARE TO BE CONFINED TO THE PUBLIC RIGHT-OF-WAY OR TO OWNER'S EASEMENTS AND/OR PROPERTY.
- 6) PRIOR TO CONNECTION TO, OR RELOCATION OF ANY EXISTING FACILITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER. THE CONTRACTOR SHALL COORDINATE THE NECESSARY SHUTDOWN OF ANY EXISTING FACILITY WITH THE OWNER. ALL CONNECTIONS TO EXISTING FACILITIES SHALL BE DONE AT THE CONVENIENCE OF THE OWNER.
- 7) CONTRACTOR SHALL TAKE STEPS NECESSARY TO PROTECT EXISTING CURB AND PAVING AND MINIMIZE THE LENGTH OF THE CURBING AND PAVING THAT MUST BE REPLACED.
- 8) ROADWAY, CURB AND SIDEWALK RESTORATION WORK SHALL BE PERFORMED TO THE SATISFACTION OF THE GOVERNING AGENCY.
- 9) THE CONTRACTOR SHALL INCLUDE AND BE RESPONSIBLE FOR ARRANGING ACCESS TO THE WORK LOCATIONS AND FOR ADDITIONAL LAND REQUIRED FOR STAGING AND STORAGE DURING CONSTRUCTION.

APX	APPROXIMATELY
AVG	AVERAGE
CI	CAST IRON
Q	CENTERLINE
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
CPL	COUPLING
CU	COPPER
DISCH	DISCHARGE
DIP	DUCTILE IRON PIPE
EL	ELEVATION
ELEV	ELEVATION
EX	EXISTING
FCA	FLANGED COUPLING ADAPTER
FL	FLANGED
FM	FORCE MAIN
GAL	GALLON
HB	HOSE BIB
H-HWL	HIGH HIGH WATER LEVEL
HTR	HEATER
HWL	HIGH WATER LEVEL
ID	INSIDE DIMENSIONS
INV.	INVERT
LWL	LOW WATER LEVEL
MECH	MECHANICAL
MJ	MECHANICAL JOINT
NJ	NUMBER
NTS	NOT TO SCALE
POT	POTABLE
PROP	PROPOSED
PVC	POLY VINYL CHLORIDE
RPC	REINFORCED CONCRETE PIPE
RED	REDUCER
R/W	RIGHT OF WAY
SQ	SQUARE
SS	STAINLESS STEEL
STL	STEEL
SW	SEAL WATER
TOP	TOP OF PIPE
TYP.	TYPICAL
WL	WATER LEVEL
WW	WALKWAY

- 
- BUCHART  
HORN, INC.**

DENNIS G. TRACEY  
PA PE044885E

WILLISTOWN TOWNSHIP  
PUMPING STATION #3  
CONTRACT 2013-01

PENNsylvania

CHESTER COUNTY

[illegible]

PROJECT NO.:	76925-00
CAD FILE:	00G01.dwg
ENGR./ARCH.:	DGT
DESIGN BY:	DGT
DRAWN BY:	DS
CHECKED BY:	EJD
DATE:	03/08/2013
DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGNOSTIC.	
DRAWING SHALL NOT BE SCALED.	
© Buckhart Horn, Inc.	

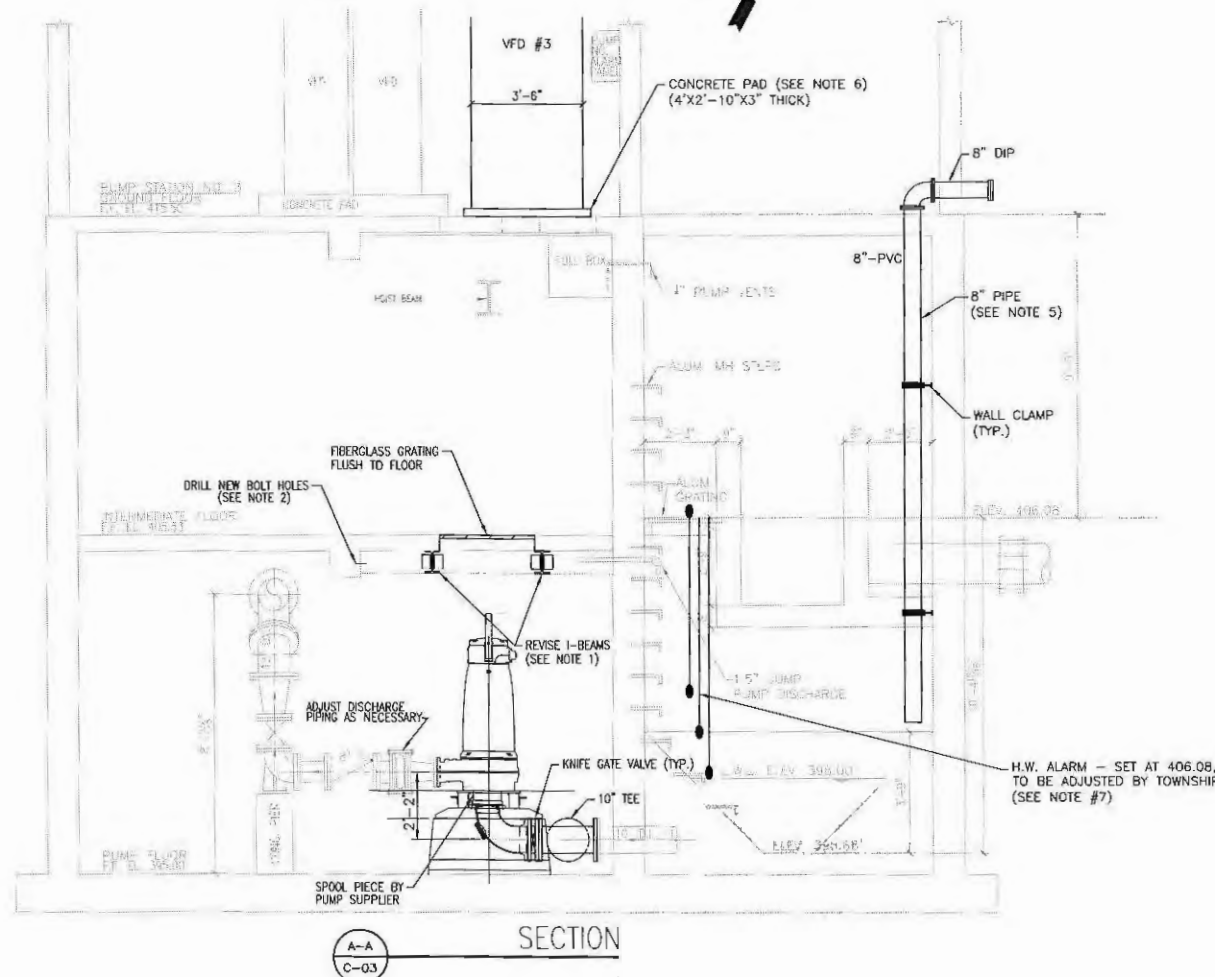
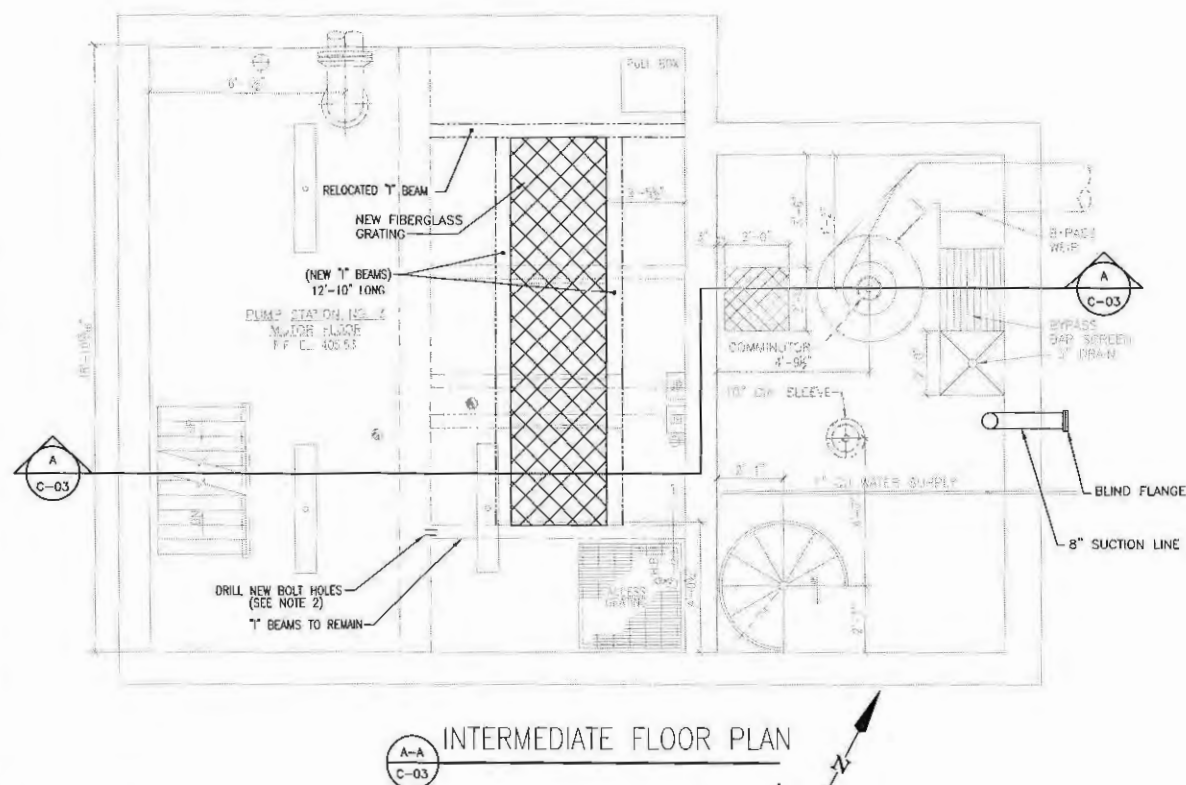
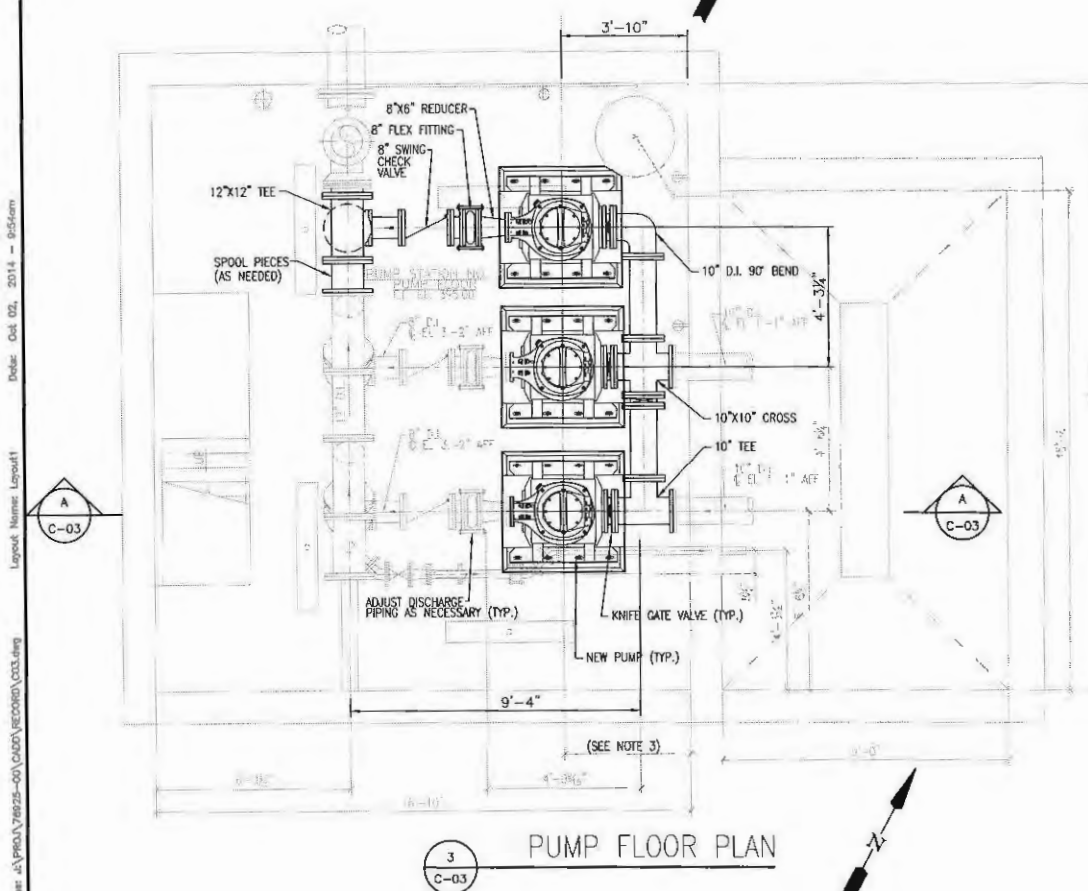
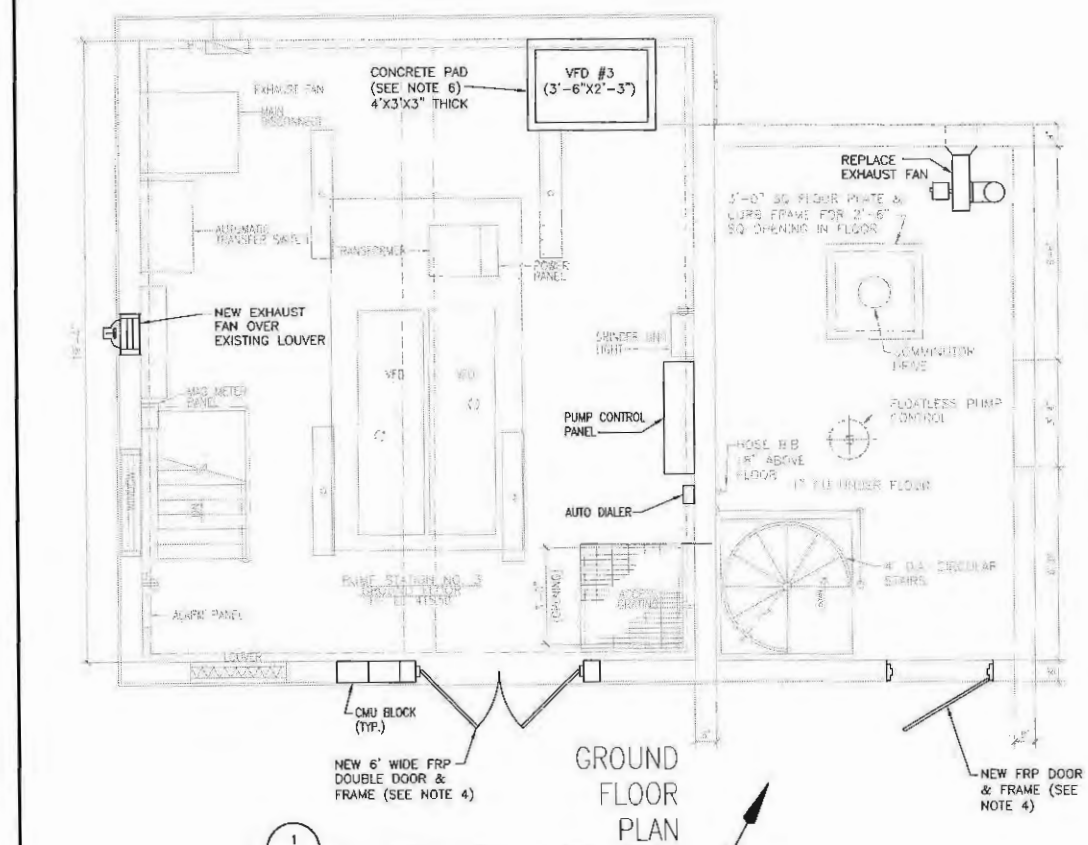
GENERAL  
NOTES,  
LEGEND, &  
SYMBOLS

DRAWING NO  
G-01

SHEET 02 OF 11







- NOTES:
1. REMOVE ALL STEEL "I" BEAMS EXCEPT THE SOUTH MOST BEAM. RELOCATE ONE OF THE LONG BEAMS TO NEW, NORTHMOST LOCATION, AND INSTALL NEW "I" BEAMS ALONG EACH SIDE OF THE OPENING.
2. DRILL TWO (2) NEW BOLT HOLES IN MOUNTING PLATE AND INSTALL NEW BOLTS (3/4"x4"), OR MATCH EXISTING ABOVE REBAR CAGE FOR BOTH EAST/WEST BEAMS, AND INSTALL TWO NEW, LONG BEAMS CONNECTING.
3. CONTRACTOR TO INSURE THAT CENTERLINE OF NEW PUMPS DOES NOT DEVIATE MORE THAN 1"± FROM CENTERLINE OF HOIST BEAM ON INTERMEDIATE LEVEL.
4. INSTALL NEW 6' WIDE FRP DOUBLE DOOR AND FRAME WITH LINTEL ABOVE THAT EXTENDS 8"± EITHER SIDE OF EACH FRAME. MATCH EXISTING WEST WELL DOOR AND FRAME AND REPLACE WITH NEW FRP DOOR AND FRAME OF SAME SIZE.
5. NEW 8" SUCTIION LINE CAN BE SCH. 80 PVC FROM MAIN FLOOR DOWN. CONNECT W/ METALS AND SUPPORT OFF THE EAST, WEST WELL WALL. CHANGE TO DIP FOR VERTICAL SECTION AND BLIND FLANGE OUTSIDE.
6. CONTRACTOR TO VERIFY PAD DIMENSIONS TO ACCOMMODATE VFD #3; AND LOCATE TO ALLOW USE OF EXISTING FLOOR PENETRATIONS.
7. INSTALL THREE FLOAT SWITCHES (ON-OFF-ALARM).

[illegible]

PROJECT NO.:	76925-0
CAD FILE:	
ENGR./ARCH.:	DGT
DESIGN BY:	DGT
DRAWN BY:	DS
CHECKED BY:	EJO
DATE:	03/08/2013

DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGNOSTIC.

DRAWING SHALL NOT BE SCALED

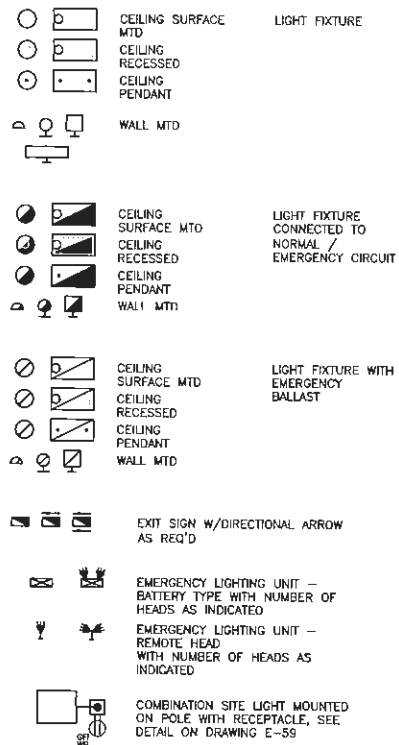
© Buckhorn North, Inc.

DATE: 03/08/2013  
DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGRAMMATIC. DRAWING SHALL NOT BE SCALED.  
(C) Buconort Hm. Inc.

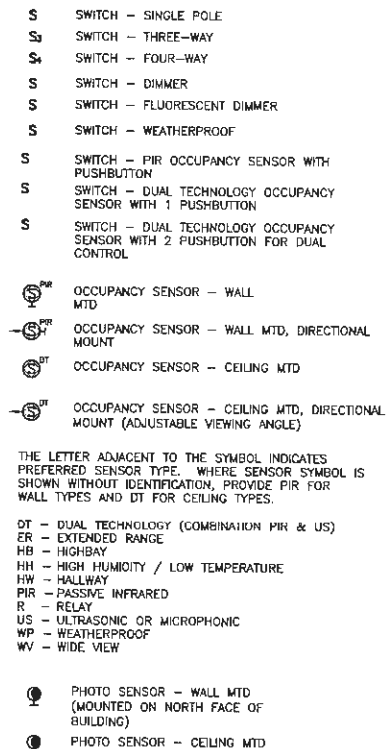
ELECTRICAL AND CONTROL SYSTEM  
ABBREVIATIONS

A	- AMPERES
AC	- ALTERNATING CURRENT
A.F.F.	- ABOVE FINISHED FLOOR
A.F.G.	- ABOVE FINISHED GRADE
ALUM	- ALUMINUM
AUX	- AUXILIARY
B.F.G.	- BELOW FINISHED GRADE
BKR	- BREAKER
BLDG	- BUILDING
C	- CONDUIT
C&C	- CABLE AND CONDUIT
CB	- CIRCUIT BREAKER
CLAR.	- CLARIFIER
CP	- CONTROL PANEL
D	- DEEP
D.C.	- DIRECT CURRENT
D.O.	- DISSOLVED OXYGEN
D.S.	- DISCONNECT SWITCH
DTSP	- RS-485 MODBUS CABLE
DWG	- DRAWING
EC	- ELECTRICAL CONTRACTOR
EGC	- EQUIPMENT GROUNDING CONDUCTOR
EXIST.	- EXISTING
F	- FUSE
FAIL	- FAILURE
F.L.A.	- FULL LOAD AMPS
FSS	- FUSED SAFETY SWITCH
GFI	- GROUND FAULT INTERRUPTER
GRD	- GROUND
H	- HIGH
HOA	- HAND-OFF-AUTO
HP	- HORSEPOWER
HSC	- HYDRAULICS SYSTEM CENTER
HUH	- HORIZONTAL UNIT HEATER
INSTR.	- INSTRUMENTATION
I/O	- INPUT/OUTPUT
KW	- KILOWATT
KV	- KILOVOLTS
L	- LOW LINE
L/R	- LOCAL-REMOTE
M	- MOTOR
M/A	- MANUAL-AUTO
mA	- MILLIAMPERE
MAG	- MAGNETIC
MC	- MECHANICAL CONTRACTOR
MCC	- MOTOR CONTROL CENTER
MCP	- MOTOR CIRCUIT PROTECTOR
MDS	- MAIN DISTRIBUTION SWITCHBOARD
MDP	- MAIN DISTRIBUTION PANEL
MH	- MANHOLE
MOD	- MOTOR OPERATED DAMPER
MOG	- MOTOR OPERATED GATE
MOV	- MOTOR OPERATED VALVE
MS	- MOTOR STARTER
N	- NEUTRAL
NFSS	- NON-FUSED SAFETY SWITCH
NO.	- NUMBER
O/C	- OPEN-CLOSE
O/C/A	- OPEN-CLOSE-AUTO
OLS	- OVERLOADS
P	- POLE
PB	- PUSHBUTTON
PCS	- PROCESS CONTROL SYSTEM
PCSS	- PROCESS CONTROL SYSTEM SUPPLIER
PDC	- POWER DISTRIBUTION CENTER
PDP	- POWER DISTRIBUTION PANEL
PLC	- PROGRAMMABLE LOGIC CONTROLLER
PD	- PHASE
FMD	- PROGRAMMABLE MESSAGE DISPLAY
POS.	- POSITION
PRE	- POWER ROOF EXHAUSTER
PRESS.	- PRESSURE
PR	- PRIMARY
PT	- PUSH TO TEST
PTZ	- PAN, TILT, ZOOM (CAMERA)
RAS	- RETURN ACTIVATED SLUDGE
RECIRC.	- RECIRCULATION
RGS	- RIGID GALVANIZED STEEL
RS	- RIGID STEEL
SCC	- SYSTEM CONTROL CENTER
SCH.	- SCHEDULE
SEC.	- SECONDARY
SHLD	- SHIELDED
SN	- SOLID NEUTRAL
SPD	- SURGE PROTECTIVE DEVICE
S/S	- START-STOP
SS	- STAINLESS STEEL
SW	- SWITCH
TBR	- TO BE REMOVED
T-M	- THERMAL MAGNETIC
TEMP.	- TEMPERATURE
TSP	- TWISTED SHIELDED PAIR
TYP	- TYPICAL
U.O.N.	- UNLESS OTHERWISE NOTED
UPS	- UNINTERRUPTIBLE POWER SUPPLY
US	- ULTRASONIC
UV	- ULTRAVIOLET
UNP	- UTILITY WATER PUMP
V	- VOLTS
VFD	- VARIABLE FREQUENCY DRIVE
VUH	- VERTICAL UNIT HEATER
W	- WATTS
WAS	- WASTE ACTIVATED SLUDGE
WH	- WALL INSERT HEATER
WP	- WEATHERPROOF
XFMR	- TRANSFORMER
XMTR	- TRANSMITTER

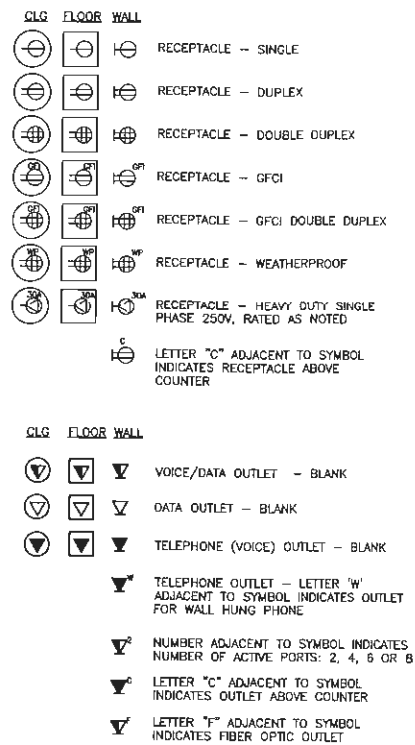
ELECTRICAL SYMBOLS  
LIGHTING



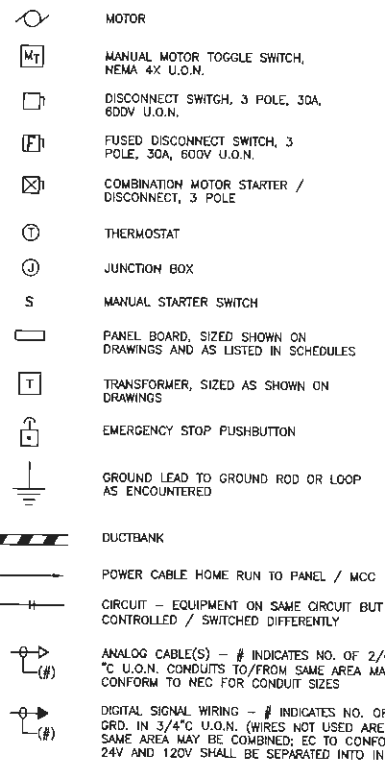
WIRING DEVICES



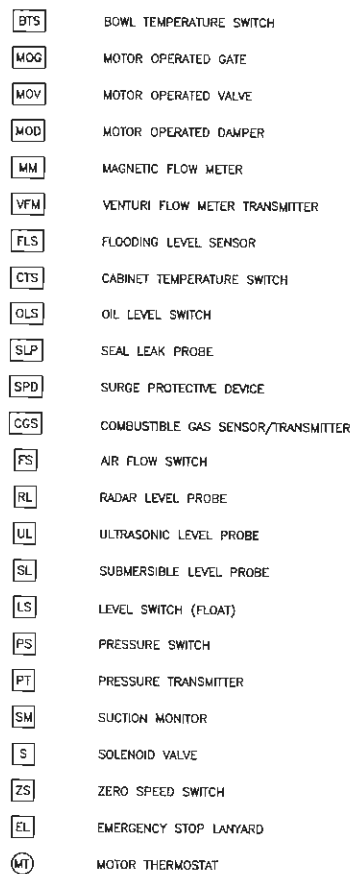
WIRING DEVICES  
CONTINUED



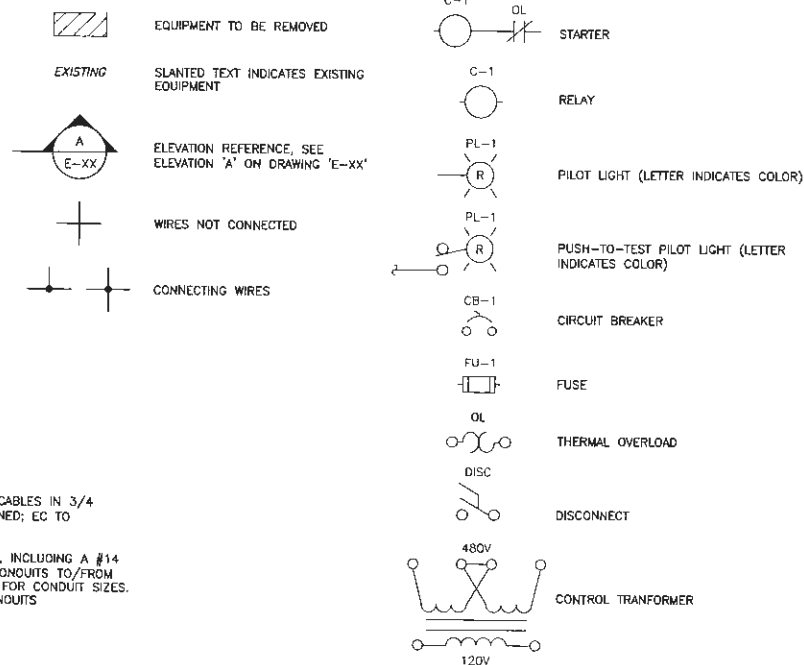
POWER DISTRIBUTION



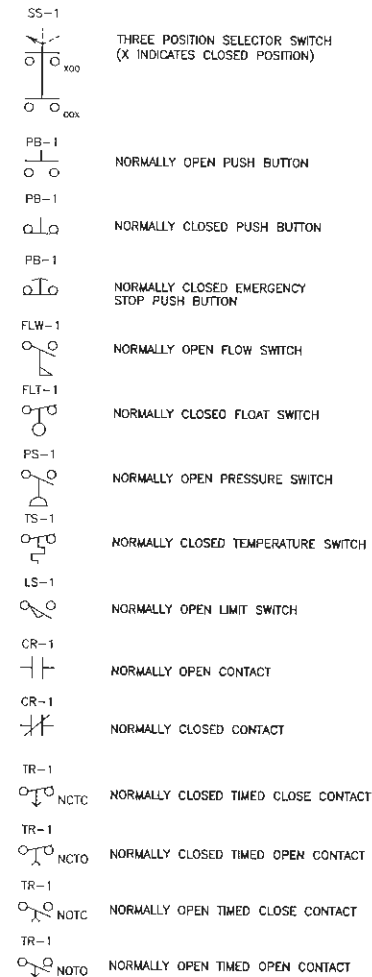
PROCESS DEVICES



GENERAL



WIRING DIAGRAM



CHARLES J. MURPHY  
PA 00735795

WILLISTOWN TOWNSHIP  
PUMPING STATION #3  
CONTRACT 2013-01

PENNSYLVANIA

CHESTER COUNTY

DATE

BY

REVISION

NO.

PROJECT NO.: 76925-00  
CAD FILE: E-1.dwg  
ENGR./ARCH.: CJM  
DESIGN BY: CJM  
DRAWN BY: CLM  
CHECKED BY: ---  
DATE: 3/20/2013

NOTING: INTENT IS TO INDICATE GENERAL APPROXIMATE DESIGN AND INTENT OF WORK AND IS NOT TO BE USED FOR CONSTRUCTION. DRAWING SHALL NOT BE SCALED.  
© Buechart Horn, Inc.

ELECTRICAL  
ABBREVIATION  
AND SYMBOL  
SHEET

DESIGN NO.

E-1

SHEET 06 OF 11

DWG STATUS (RECORD)



CHARLES J. MURPHY  
PA PE073978

WILLISTOWN TOWNSHIP  
PUMPING STATION #3  
CONTRACT 2013-01

PENNsylvania

CHESTER COUNTY

[illegible]

PROJECT NO.:	78925-00
CAD FILE:	E-3.dwg
ENGR./ARCH.:	CJM
DESIGN BY:	CJM
DRAWN BY:	CLM
CHECKED BY:	
DATE:	3/20/2013

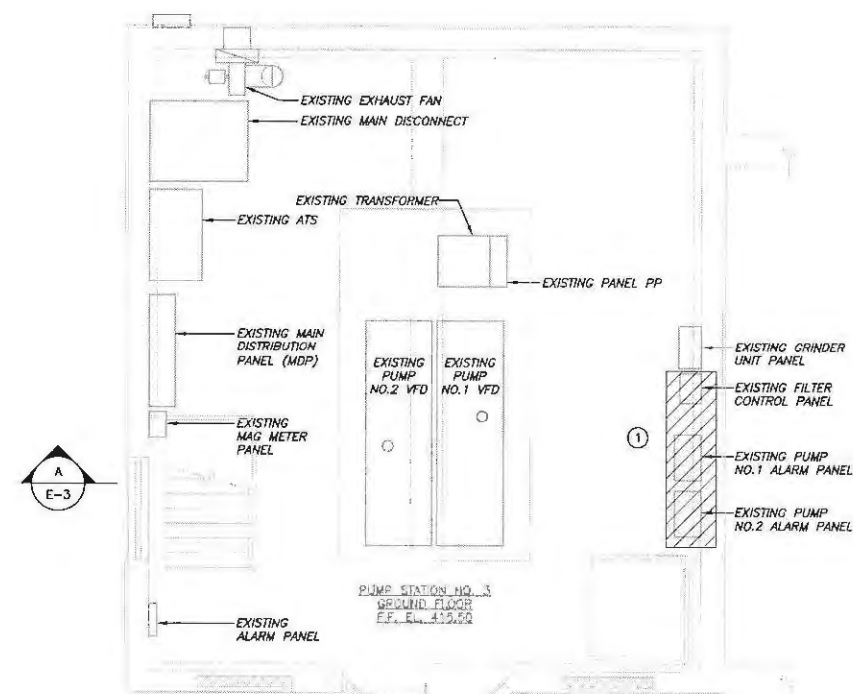
DRAWING INTENT IS TO INDICATE GENERAL ARRANGEMENT, DESIGN AND INTENT OF WORK AND IS PARTLY DIAGNOSTIC. DRAWING SHALL NOT BE SCALED.

© Burnham Root, Inc.

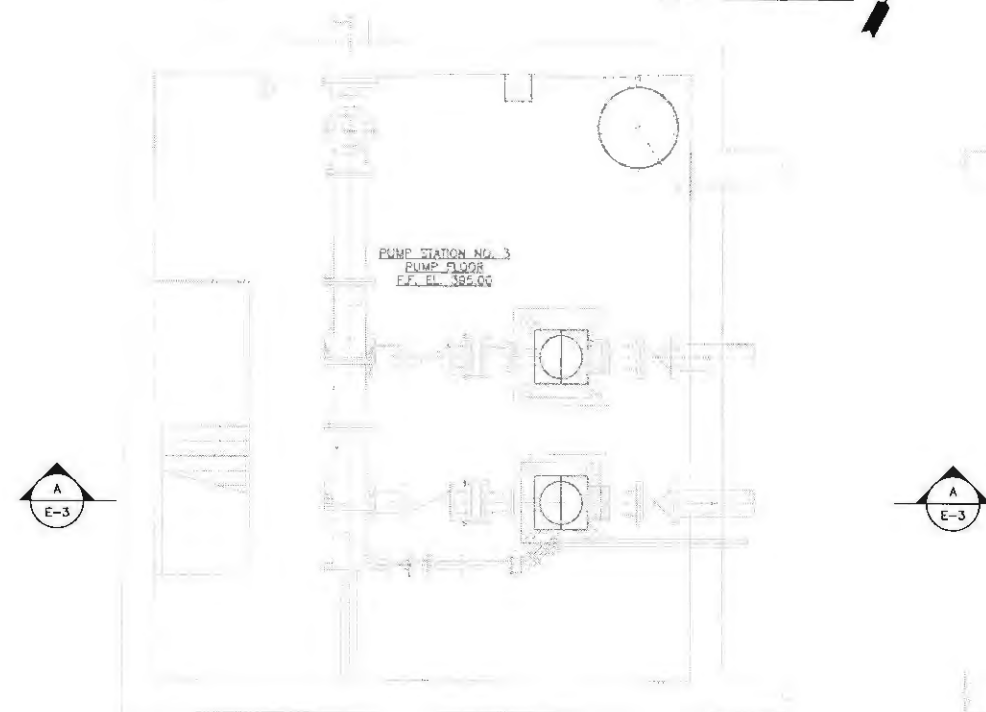
ELECTRICAL  
PUMPING  
STATION  
DEMOLITION  
PLANS

DRAWING NO.  
E-3

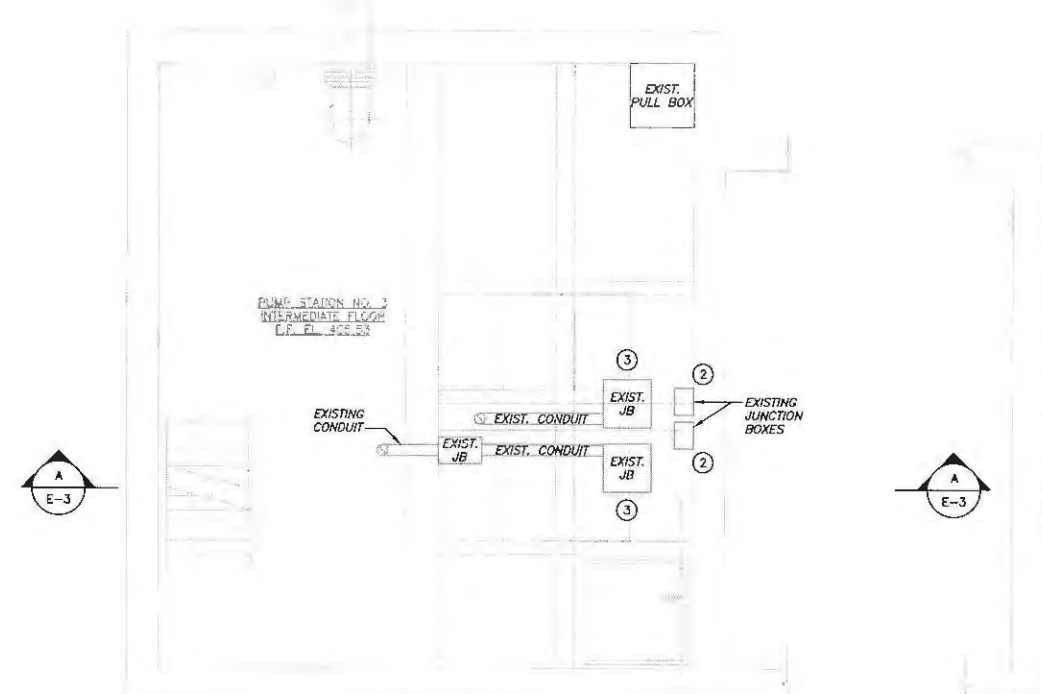
SHEET 08 OF 11



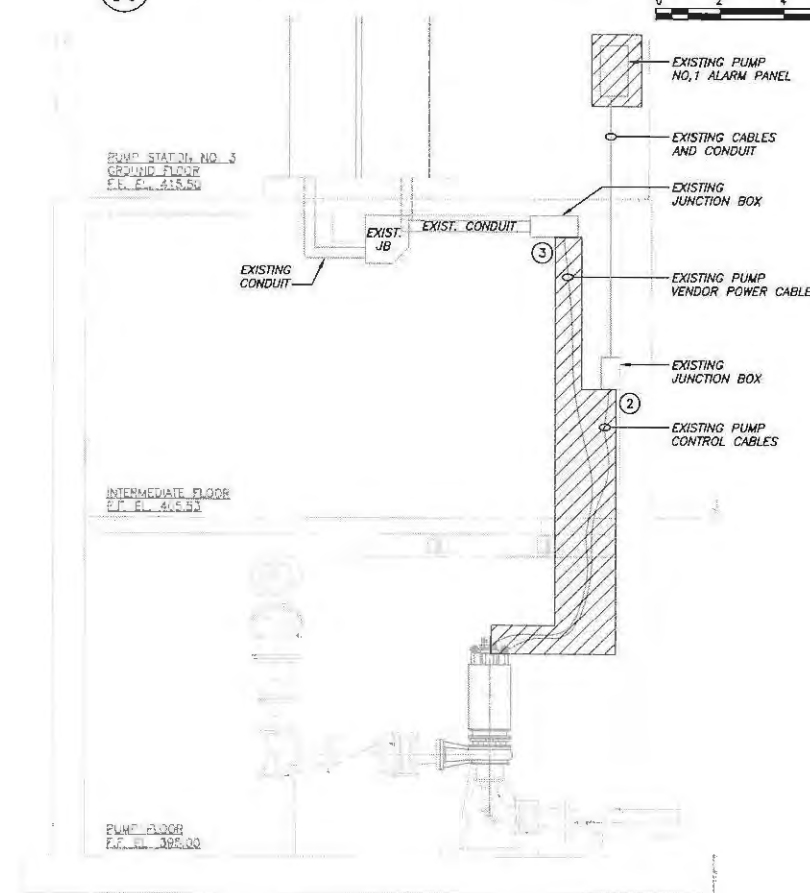
1 DEMOLITION — GROUND FLOOR PLAN



DEMOLITION - PUMP FLOOR PLAN



2 DEMOLITION - INTERMEDIATE FLOOR PLAN  
E-3 0 2' 4' 6'



SECTION

- ### DRAWING NOTES

- ① REMOVE FILTER CONTROL AND ALARM PANELS. RETAIN CABLES AND CONDUIT.
- ② REMOVE CONTROL CABLES ONLY FROM PUMP TO JUNCTION BOX. RETAIN JUNCTION BOX, TERMINAL STRIP, AND ALL OTHER CABLES AND CONDUITS.
- ③ REMOVE VENDOR PUMP POWER CABLE FROM PUMP TO JUNCTION BOX OR VFD IF HOME RUN IS TO VFD. RETAIN JUNCTION BOX AND ALL OTHER CABLES AND CONDUITS.





